	Application No.	Applicant(s)
Notice of Allowability	09/750,264	GUVEN ET AL.
	Examiner	Art Unit	
	Dmitry Levitan	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to _5/22/07_.

2. ☒ The allowed claim(s) is/are _7-10 and 28-32, renumbered as 1-4, 6-9 and 5_.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☐ Examiner's Statement of Reasons for Allowance

9. ☒ Other _Attachment A_.

EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the

payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with

Steven A. Shaw on 7/23/07.

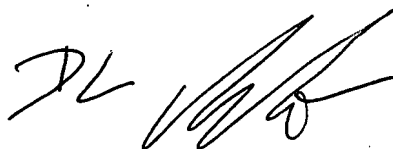The application has been amended as follows:

a.   Claims 17 - 27 have been cancelled as non-elected claims.

b.   Claims 7-10 and 28-32 have been amended (for clarity) per Attachment A.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The

examiner can normally be reached on 8:30 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Lynn Feild can be reached on (571) 272-2092. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dmitry Levitan
Primary Examiner
Art Unit 2616

**DMITRY LEVITAN
PRIMARY EXAMINER**

Attachment A.

LISTING OF CLAIMS

1-6 cancelled.

7.   (Currently Amended) A method for reducing data loss in the event of packet
loss in a modem relay connection over a packet network including a transmitting
modem and a transmitting gateway, a receiving modem and a receiving gateway, the
method comprising:

> providing a packet format including a header portion, a sequence number and a
>> data portion;

> dividing said data portion into a plurality of segments; designating one of said
>> segments as a new data segment;

> providing a plurality of sequential blocks of modem data from said transmitting
>> modem to said transmitting gateway;

> retaining a predetermined number of said plurality of sequential blocks of modem
>> data at said transmitting gateway, by dropping thea first oldest block and
>> retaining thea most recent block; providing thesaid most recent block of
>> data in said designated new data segment of said data portion of said
>> packet;

> providing thea plurality of remaining retained blocks of data in thea remainder of
>> said said plurality of segments;

>> wherein:

>>> each time said transmitting gateway receives a new block of data from
>>>> said transmitting modem, saidan additional oldest block is dropped
>>>> from said remaining retained setblocks of data, creating a new

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remaining retained blocks of data;

said new block of data is encoded in thea next data packet as thea new
data block; and

said new remaining retained blocks are encoded into said data packet as
a plurality of redundant data blocks;

wherein the plurality of redundant data blocks are added by a data
redundancy with a repetition count k, and

wherein the redundancy is performed as data encoding into each
packet[[,]] according to the following formula, where x is thea
current packet sequence number, N represents a plurality of data
bits corresponding to each of said data packet as said data packet
is, and

each iteration encodes said plurality of data bits for thea current packet x
and a plurality of previous packets into thea data length of the
current packet, thean addition sign signifying grouping the data bits
together in a block within the packet for each iteration:

$$[x-j]N + [x-i]N$$

where i = (0 to (k - 1)) and j = (1 to k) and each of the variables i, j
increase by 1 in each iteration up to k levels of iterations that
are performed for each of said packets;

transmitting said packets from said transmitting gateway to said
receiving gateway.

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8.   (Currently Amended) The method of claim 7, wherein saidfurther comprising lost packet recovery at said receiving gateway includes, said lost packet recovery:

receiving said transmitted packets;

reading said sequence numbers of a plurality of consecutively received packets to determinedetect a plurality of lost packets loss and thus a data lost, including;

comparing thesaid sequence number of a sequentially ordering of said received packets, and determining thea difference in thesaid compared sequence numbers; and

providing the redundant data corresponding to said data lost during said packet loss[[,]] to said receiving modem.

9.   (Currently Amended) The method of claim 8, wherein thea number of said retained predetermined number of sequential blocks is re-negotiated when said number of detected missinglost packets exceeds said retained predetermined number of sequential blocks between the twosaid transmitting gateway and said receiving gateways.

10.   (Currently Amended) The method of claim 9, further includingcomprising:

Detection ofdetecting a value of the number of lost packets which exceeds the value of said retained predetermined number of sequential blocks;

said receiving gateway reporting said detection; and

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          adjusting the redundancy to compensate for increases in packet loss across said packet network.

11-27 cancelled.

28.   (Currently Amended) A method for modem relay data redundancy, comprising:

establishing a modem relay transmission of a plurality of packets between a first modem relay unit (MRU) and a second MRU over a packet network,

        wherein ~~the~~each packet in the transmission between the first and the second MRUs is formatted with a sequence number uniquely assigned to each packet;

negotiating a data redundancy repetition count k between the first and the second MRUs;

applying a data redundancy to the modem relay transmission,

wherein the redundancy is performed as data encoding into each packet, according to the following formula where x is ~~the~~a current packet sequence number, N represents a plurality of data bits corresponding to each packet as the packet is, and each iteration encodes said data bits for the current packet x and previous packets into ~~the~~a data length of the current packet, ~~the~~an addition sign signifying grouping the data bits together in a block within the packet for each iteration:

$$[x-j]N + [x-i]N$$

where i = (0 to (k - 1)) and j = (1 to k) and each of the variables i, j increase by 1 in each iteration up to k levels of iterations that are

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performed for each packet.

29.　(Currently Amended) The method of claim 28, wherein each k iteration of the data redundancy in each packet encodes together N bits of data N from a first packet and a second packet paired together, and wherein the second packet has thea preceding packet sequence number to thea first packet in the transmission.

30.　(Currently Amended) A system for modem relay, comprising:

a first modem relay unit (MRU) transmitting packetized data in a plurality of packets over a packet network to a second MRU;

wherein the first MRU formats each packet in the transmission with a sequence number uniquely assigned to each packet,

the first and the second MRUs negotiate a data redundancy repetition count k between the first and the second MRUs,

the first MRU applies a data redundancy to the modem relay transmission,

wherein the redundancy is performed as data encoding into each packet, according to the following formula where x is thea current packet sequence number, N represents a plurality of data bits corresponding to each packet as the packet is, and each iteration encodes said data bits for the current packet x and previous packets into thea data length of thea current packet, thean addition sign signifying grouping the data bits together in a block within the packet for each iteration:

$$[x-j]N + [x-i]N$$

where i = (0 to (k - 1)) and j = (1 to k) and each of the variables i, j

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increase by 1 in each iteration up to *k* levels of iterations that are performed for each packet.

31. (Currently Amended) The system of claim 30, wherein each *k* iteration of the data redundancy in each packet encodes together $\underline{N}$ bits of data N-from a first packet and a second packet paired together, and wherein the second packet has the$\underline{a}$ preceding packet sequence number to the first packet in the transmission.

32. (Currently Amended) The method of claim 7, wherein each *k* iteration of the data redundancy in each packet encodes together $\underline{N}$ bits of data N-from a first packet and a second packet paired together, and wherein the second packet has the$\underline{a}$ preceding packet sequence number to the first packet in the transmission.

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